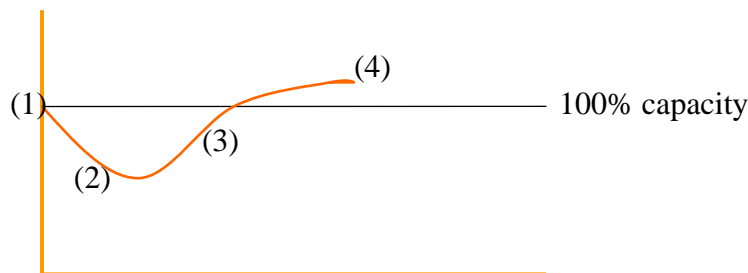


Restoration and Regeneration for Optimal Performance

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Functional Soccer Training

Rest, recovery and regeneration are vital to the optimal performance of your soccer team. Restoration is the act of restoring something or someone to a satisfactory state. In sports this means that the body must recover from the mental and physical exertion of the activity to the point where the athlete trains at optimal levels. Here is a graph depicting effective restoration:



(1) The athlete in this example starts out his or her training or game at 100%.
(2) After training the performance line drops below the 100% level.
During rest (3) and recovery this athlete was able to increase beyond his or her previous capacity levels (4). Your goal for optimal restoration is to restore performance capacity to either the 100% line or above.

This graph depicts what happens when players don't effectively recover after multiple exercise bouts:



(1) The athlete in this example also starts at 100%. (2) After training performance drops. After multiple days of high activity without enough sleep, rest or recovery his or her performance drops and is in danger of injury. (3)

During sport many things happen in the body that can cause reduced performance. Lactic acid production and reduced glycogen levels are two of the most well known factors that contribute to fatigue. It is because of by products like lactic acid, hydrogen ions and glycogen depletion that we must restore and regenerate our body to optimal levels prior to the next competition.

It is important to remember that when we work hard we must rest hard. It is during rest that our bodies grow, not during work.

Intense Work + Intense work=Failure and injury

Work + Rest and Restoration=Success and growth

When athletes work without proper rest they are setting themselves up for failure and injury. Tudor Bompas said improper recovery can lead to fatigue. Fatigue will cause a lack of coordination and concentration, which can cause poor movement quality and thus injury. He further said proper recovery accelerates regeneration, decreases fatigue and enhances adaptations to exercise. The desired goal of sports training programs is adaptation to exercise and lowered risk of injury.

During tournament situations especially where athletes play 3-4 games in a weekend, proper recovery techniques reign supreme. Follow the six guidelines below for ideas on how to speed recovery in tournament and regular scheduled game situations.

1. Food and Hydration-

- a. One source said that the ideal time for replenishing your carbohydrate stores is 30-60 minutes after your game or practice. This is especially important for soccer teams that sometimes have multiple competitions in a day. When replenishing fluids, drink about 20 ounces per pound of body weight lost during the match. Next be sure to replenish carbohydrate stores with a carbohydrate-protein mix. One study showed that a carbohydrate-protein mix is more effective than a traditional 6% carbohydrate only sports drink. (1)
- b. A research study compared a team that ate a carbohydrate rich meal to a team that ate a normal meal. The team that ate the carbohydrate rich meal covered 25% more distance. This shows that having enough of the right fuels in the body for competition play a big part in how the game is played.

2. Post game regenerative run-

- a. The post game regenerative run can be used immediately after a game or the day after the game. If you have a game later in the day, it is especially important to immediately follow the game up with a good easy regenerative jog. If you don't play for a couple of days then perform the run the day after the game. This will help clear negative by products built up during the game.

3. Stretching-

- a. Always stretch after training or games. This will decrease the soreness that sometimes appears after training. Perform nice easy static stretching focusing primarily on the lower extremities.

4. Self Massage-

- a. Massage is widely known as an effective tool for recovery. The problem is many teams don't have the budget for a massage therapist. To overcome this, use a foam roller or a slightly flat soccer ball. Roll specific muscles over the foam roller or soccer ball for effectiveness. Your focus should be on the lower extremities. Self Massage is used to increase blood flow, relax the nerves and loosen muscle. Important Note: Self massage can be uncomfortable but even a professional massage has uncomfortable moments.

5. Hot Cold contrast baths-

- a. The hot-cold contrast baths can also advance recovery. To perform Hot-cold contrast baths simply sit in hot water for about 2 minutes 30 seconds then about 45 seconds in the cold water. Repeat this a few times for maximum benefits.

6. Sleep-

- a. Athletes must sleep to recover. If they don't get enough sleep their physical performance will be impaired.

Even though rest and recovery is not a glamour topic like speed and agility, it lays the foundation for planning all your training. One of the biggest mistakes you can make as a coach or parent is to think that the harder and more frequent my athlete exercises the better athlete they will be. Proper rest and recovery between intense games and conditioning is key to growing and preventing injury.

1. Williams, Michael. "Effects of Recovery Beverages on Glycogen Restoration and Endurance Exercise Performance." *The Journal of Strength and Conditioning Research* 11, no. 1 12-19